

Amendments to the Specification

Please replace the first paragraph on Page 1 with the following marked-up replacement paragraph:

-- This application is co-pending with and claims pursuant to 35 U.S.C. § 120 as to its common subject matter the filing date of patent application serial number 09/637,742, filed August 11, 2000 (now U. S. Patent 6,633,761), and patent application serial number 09/657,745, filed September ~~[[10]]~~ 8, 2000 (now U. S. Patent 6,691,227). --

Please replace the fifth paragraph on Page 3 with the following marked-up replacement paragraph:

-- A network system is provided comprising: at least one mobile client; one or more short-range wireless access points; software operating ~~[[on]]~~ directly on these access points or, alternatively, on one or more adapters coupled to these access points; a location registry; and a plurality of location-aware service proxies. --

Please replace the paragraph that begins at the bottom of Page 8 and carries over to the top of Page 9 with the following marked-up replacement paragraph:

-- Initially, as shown generally at step 300, the location-aware service proxy 103 issues a request for information from the Location Registry 102, including the client ID for which the information is being requested. Subsequently, as shown generally at step 301, upon receiving the information request, the location registry 102 accesses the table 105 entry associated with the client ID contained in the query request, and retrieves the list of access point IDs associated with the client ID. Finally, as shown generally at step 302, the location registry issues a response to the location aware service proxy, including the list of access point ~~[[IDs]]~~ IDs retrieved from table 105.

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Please replace the paragraph that begins at the bottom of Page 9 and carries over to the top of Page 10 with the following marked-up replacement paragraph:

-- Referring now primarily to FIG. 5, the preferred location aware service proxy method will now be described in more detail. Initially, [[A]] a mobile client request is received by the request handling interface, as shown generally at step 500. Subsequently, the location-aware service module determines the client location by issuing a query to the location registry, as shown generally at step 501. Subsequently, as shown generally at step 502, the location-aware service module determines the best means for handling the request, based upon the information contained in the request and the location information obtained from the location registry. Subsequently, as shown generally at step 503, the module determines whether or not satisfying the client query requires interfacing with a third-party information source. If third-party information is required, a request is issued 504 to the third party information source from the request forwarding interface, the third-party information source generates and transmits 505 the requested information, the ~~request-receiving~~ response-receiving interface receives 506 a response from the third-party information source, and the response generator creates 507 a corresponding response for, and transmits 508 the response to, the client. If third-party information is not required as determined at step 503, only steps 507 and 508 are performed. --

Please replace the paragraph that begins at the bottom of Page 10 and carries over to the top of Page 11 with the following marked-up replacement paragraph:

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-- This present invention can be used in conjunction with a Protocol Proxy and Data Manipulation Server (DMS), such as that described in commonly assigned U.S. Patent _____ (serial number 09/_____, filed 09/848,394, filed concurrently herewith and incorporated herein by reference, entitled "Techniques Technique for Enabling Remote Data Access and Manipulation from a Mobile Pervasive Device." As disclosed therein, a Protocol Proxy intercepts mobile client requests and, using service information obtained from the Data Manipulation Server, annotates the returned content with available services based on a plurality of criteria, possibly including location. These Protocol Proxies may be used in conjunction with the present invention by annotating the content returned from a Location Aware Service Proxy with these additional services. The Protocol Proxy may employ the query interface of the Location Registry defined herein to obtain location information about the mobile client. Moreover, a Location Aware Service Proxy, as disclosed herein, may also function as a Protocol Proxy. In this latter case, the Location Aware Service Proxy preferably performs further location-sensitive filtering on the available service list obtained from the DMS. Alternatively, the Location Aware Service Proxy may transmit location information (obtained from the Location Registry) to the DMS, where the DMS then factors that information into its service list-generation processing. --

Please replace the paragraph that begins at the bottom of Page 11 and carries over to the top of Page 12 with the following marked-up replacement paragraph:

-- (1) A Hypertext Transfer Protocol (HTTP) proxy which receives a plurality of HTTP requests transmitted by the clients and generates location-based content. For instance, the content can be based on information obtained from an external server identified in the HTTP request. By

way of example, the HTTP proxy might receive a request for a location-based map. Upon receiving the request, the proxy obtains the location of mobile client 100. Based upon the client location, the proxy 103 generates (or otherwise obtains) a map, which is then forwarded back to the requesting client. Alternatively, the HTTP proxy can determine what, if any, additional services are available to the client in that location, e.g., available equipment such as a printer or projector. Preferably, this information is obtained by querying an optional resource location registry (such as a Data Manipulation Server as described in the above-identified commonly-assigned patent application serial number 09/_____, filed concurrently herewith 09/848,394), which can be co-located with the location registry 102 of the present invention. Links to these services can be added to the response document, for subsequent transmission back to the requesting client. --

Please replace the first (only) full paragraph on Page 12 with the following marked-up replacement paragraph:

-- (2) A Wireless Session Protocol (WSP) proxy which receives WSP requests transmitted by the clients and generates location-based content, e.g., based on information obtained from an external server identified in the WSP request. The Wireless Session Protocol (WSP) is defined as part of the Wireless Application Protocol (WAP). More information about WSP can be found at <http://www.wapforum.org>. By way of example, the WSP proxy could receive a request for a location-based map. Upon receiving the request, the proxy obtains the location of mobile client 100. Based on this location, the proxy 103 generates (or otherwise obtains) a map which is then forwarded back to the requesting client. Alternatively, this proxy could determine the availability of additional client services at the location. Preferably, this information is obtained by querying an

optional resource location registry (such as a Data Manipulation Server as described in the above-identified commonly-assigned patent application serial number 09/_____, filed concurrently herewith 09/848,394), which can be co-located with the location registry 102 of the present invention. Links to these services can be added to the response document, for subsequent transmission back to the requesting client. —

Please replace the paragraph that begins at the bottom of Page 12 and carries over to the top of Page 13 with the following marked-up replacement paragraph:

-- (3) A Domain Name System (DNS) proxy which receives a plurality of DNS requests transmitted by the clients. The DNS proxy determines whether the requested hostname corresponds to a location-based service and, if so, determines the appropriate IP address according to the client's location. The client's location is obtained from the location registry 102, while the IP address is obtained from a resource location registry. If the requested hostname does not correspond to a location-based service, the DNS proxy forwards the request to the default DNS server. By way of example, when the user requests the IP address for a host named "printer," the DNS proxy determines the client's current location and returns the IP address of the nearest printer. However, when the user requests the IP address for a host named "www.reefedge.com," the DNS proxy forwards the request to the default DNS server to determine the address of www.reefedge.com. The DNS proxy can also be used to support locally-available services, such as "login" or "search" services. —